EPA

Notes From Underground

An update on source water protection and underground pollution control from the U.S. Environmental Protection Agency (EPA), Region 9, serving Arizona, California, Hawaii, Nevada, Native American Tribes in those states, and the Pacific Islands.

Winter 2000
EPA 909-N-00-001

UNDERGROUND INJECTION CONTROL REGULATIONS AMENDED

- As of April, 2000:

NO new large capacity cesspools

NO new motor vehicle waste disposal wells

Any existing large capacity cesspools and motor vehicle waste disposal wells will be phased out

ALSO INSIDE:

Questions about dairy impacts to water quality?

www.epa.gov/region09/animalwaste

EPA bans Motor Vehicle Waste Disposal Wells and Large Capacity Cesspools due to their high risk to Underground Sources of Drinking Water

Shallow injection wells are used throughout the United States to dispose of stormwater, sewage, and other waste fluids. Some wastes are not suitable for discharge to soil and underlying ground water, because of their potential to contaminate drinking water sources.

On December 7, 1999, the Environmental Protection Agency (EPA) published revisions to the Class V Underground Injection Control (UIC) regulations, adding new restrictions for two categories of shallow Underground Injection wells: motor vehicle waste disposal wells and large capacity cesspools.

Why regulate Motor Vehicle Waste Disposal Wells. Fluids drained from engines during maintenance include substances known to contaminate underground sources of drinking water, including fuel and fuel oxygenates (such as MTBE), anti-freeze (ethylene glycol) and metals. Contaminants can also be introduced during maintenance, such as degreasers (perchloroethylene or PCE.) These substances may contaminate ground water through shallow disposal wells, also called sumps, drywells, septic systems, and infiltration galleries.

Why regulate large Cesspools. Cesspools, most commonly constructed as pits reinforced with brick, stone or concrete, allow untreated sewage to percolate directly to soil and ground water. Large-capacity cesspools (serving 20 or more persons per day) are being phased out because they can be a significant source of microbial contamination and nitrates. EPA recognizes that in most parts of the country, local environmental health regulators have made significant progress in eliminating large and single-family cesspools. EPA's action with this rule reinforces local and state efforts to protect public health.

Underground Injection regulations were adopted in 1984, under the Safe Drinking Water Act, to address potential risks to ground water from a variety of deep and shallow subsurface disposal practices. The original regulations were very broad, due to the diverse array of construction configurations and uses of wells, especially shallow injection wells (Class V wells.) This subcategory of wells includes any constructed system for underground waste disposal, such as drywells, septic systems, and modified sinkholes.

Federal Register Notice 99-31048 contains the new regulations and clarifications of existing EPA Underground Injection Control program requirements. They will be published in the next Code of Federal Regulations in 40 CFR, parts 144-147. Class V regulations are consolidated in 40 CFR part 144, Subpart G.

(continued)

Clarifications for all Class V wells:

- Definitions of Class V shallow disposal wells have been clarified to define the terms *drywell, cesspool, improved sinkhole, point of injection, septic system,* and *subsurface fluid distribution system.*

- If you are required or decide to close your Class V injection well, you must submit preclosure notification to their UIC program (at the state environmental agency or regional EPA office) a minimum of 30 days prior to the closure or destruction of the well(s). EPA will develop a preclosure notification form; primacy states (Nevada) may adopt the EPA form or develop their own.

Specific Requirements for 2 well types:

New Restrictions for Motor Vehicle Waste Disposal Wells: The construction of new motor vehicle waste disposal wells is prohibited as of April 5, 2000. Motor vehicle waste disposal wells existing prior to April 5, 2000 may be required to close and/or convert (so that no motor vehicle waste reaches the well) if they are located within state-designated ground water protection areas or other sensitive ground water areas. Information about groundwater protection areas will be made public by state drinking water agencies and the UIC programs. The 1992 "Guidelines for Closure of Shallow Injection Wells" will be revised and made available to well owners and other regulators.

New Nationwide Restrictions for Large Capacity Cesspools (serving 20 or more persons/day): The construction of new large capacity cesspools is prohibited as of April 5, 2000. Large capacity cesspools existing prior to that date will be phased out over five years. Cesspool owners will be required to connect to a municipal sewer or install an onsite wastewater treatment unit (such as a septic system) according to all applicable local and state regulations for new construction.

Links with the Source Water Program

Most states have already begun to delineate areas critical to drinking water system supply, called ground water protection areas. To protect other aquifers which supply private drinking water wells, state and federal UIC programs may, in cooperation with state water resources and drinking water agencies, identify other sensitive ground water recharge areas, where the new requirements will also be effective. Restrictions on existing motor vehicle waste disposal wells may be phased in as areas are delineated or identified.

Program Flexibility: States with delegation of the Underground Injection Control Program may adopt regulations, if they have not already done so, that are as stringent or more stringent than the federal regulations. For example, some states may identify the whole state as a sensitive ground water protection area. Several states have already banned one or more well types. The effective date for regulations in primacy states (Nevada) and Pacific insular areas will be determined by the timing of their adoption of the new regulation.

Other types of Class V Wells

The December 7, 1999 amendments address two well types. Additional well types may be addressed through regulation or guidance, pending analyses of risk and an assessment of the effectiveness of existing regulation to control risk. The "Class V Study" is a compilation of risk and regulatory data for 23 types of injection wells; it is available on the web at http://www.epa.gov/ safewater/uic/cl5study.html#volumes, or by calling the EPA regional UIC program at (415) 744-1834.

Why were industrial waste disposal wells not addressed in this rulemaking? The 1998 proposal addressed three well types: large capacity cesspools, motor vehicle waste disposal wells, and industrial waste disposal wells. At several stages of the rulemaking process, commenters noted large variations in the category, for example, even within sub-categories, such as food processing. Other approaches are being explored, and regulations may be adopted in the future. All Class V Well owners remain subject to inventory and non-endangerment requirements.

Owners and operators of injection wells should be prepared to demonstrate compliance. Compliance evaluation may include: sampling of sludge and liquid waste in disposal wells; implementation of Best Management Practices to reduce contaminant potential; well closure; and routine monitoring. Some motor vehicle wells may need to be converted for stormwater disposal. EPA will publish guidance on how to distinguish motor vehicle waste disposal wells from storm water disposal wells in vehicle areas, and guidance on how to characterize and close motor vehicle waste disposal wells.

Outreach efforts to prevent the construction of new shallow disposal wells. EPA is notifying building departments, developers, and trade organizations as well as local and state regulators, industry groups, citizens, government officials and others of these new requirements. If you would like an EPA staff person to present information about the Underground Injection Control program or related ground water protection issues, please call (415) 744-1834. A 20-minute video explaining the risks to ground water from Class V wells is also available.

For More Information

see www.epa.gov/safewater/uic for the national press release and fact sheet; for the regulation, see the Federal Register dated 12/7/99, vol. 64, no. 234, page 68546 (on the internet at http://www.access.gpo.gov/su_docs/fedreg/a991207c.html - scroll to Environmental Protection Agency.)

For general information about the Safe Drinking Water Act, call the Safe Drinking Water Hotline at (800) 426-4791.

Clean Water Act Stormwater Phase II Regulations Adopted

The U.S. Environmental Protection Agency announced on November 1, 1999, another significant action under President Clinton's Clean Water Action Plan to protect America's drinking water and waterways by curbing one of the greatest remaining sources of water pollution — storm water runoff. EPA announced it would reduce storm water runoff from construction sites between one and five acres and municipal storm sewer systems in urbanized areas serving populations of less than 100,000. This new storm water rule builds on the existing program to control storm water runoff from municipalities with populations greater than 100,000 and 11 industrial categories, including construction disturbing over five acres.

Storm water is water from rain or snow that runs off of city streets, parking lots, construction sites and residential yards. It can carry sediment, oil, grease, toxics, pesticides, pathogens and other pollutants into nearby storm drains. Once this polluted runoff enters the sewer system, it is discharged — usually untreated — into local streams and waterways. A leading public health and environmental threat, storm water runoff can contaminate drinking and recreational waters. It also remains a major source of beach and shellfish bed closures. Storm water runoff washes sediment from construction sites at a rate of 20 to 150 tons per acre each year. Sediment has been identified as the single largest cause of impaired water quality in rivers and the third largest cause of impaired water quality in lakes.

The new storm water Phase II rule is expected to make approximately 3,000 more river miles safe for boating and protect up to 500,000 people a year from illness due to swimming in contaminated waters. It will prevent beach closures, make fish and seafood safer to eat, and reduce costs of drinking water treatment. Under the expanded program, sediment discharges from approximately 97.5 percent of the acreage under development across the country will be controlled through permits. Today's new storm water regulations will control the impacts of storm water runoff through the issuance of discharge permits under the Clean Water Act. Permits are expected to be issued for at least 110,000 additional construction sites and over 5,000 municipalities across the country. Facilities and sites will have three years and 90 days to obtain these storm water permits. The Phase II permitting program has been structured for maximum flexibility. Focusing on "best management practices," each permittee will be able to select those options resulting in the most common sense, cost-effective plan for reducing storm water runoff on a case-by-case basis. Examples of best management practices include filter fences, storm drain inlet protection, and temporary mulching and seeding for construction sites, as well as public education programs, storm sewer inspections and local storm water ordinances for municipal programs. The new rule also provides incentives for industrial facilities to protect their operations from storm water exposure. At least 70,000 industrial facilities will be able to take advantage of this new permitting exemption by protecting their operations from storm water, such as covering operations under a storm resistant shelter.

The proposed storm water Phase II rule was issued in January 1998. Both the proposed and final rules were developed with extensive public outreach and communication, including consultation with a wide cross-section of interested stakeholders. There was a 90-day public comment period on the proposed rule, during which EPA received approximately 500 comments. The final storm water Phase II rule was published in the Federal Register on December 8, 1999. A copy of the rule and additional information is available on the Internet at: http:/www.epa.gov/owm/sw/phase2.

(EPA Headquarters Press Release)

So how can storm water be disposed?

The Clean Water Act storm water regulations target storm waters discharged to surface waters, whereas the UIC program regulates storm waters discharged to injection wells, such as drywells or leach fields. With tighter controls on both discharge options, people may wonder where it is legal to drain the rain.

Best Management Practice documents have been published by local, state and federal water quality agencies under the auspices of both the Clean Water Act and Safe Drinking Water Act programs. Some storm water guidance encourages the construction of drywells or infiltration galleries to dispose of storm water.

Storm water disposal via injection wells is acceptable as long as the owner/operator of the injection well(s) complies with the inventory requirement (at 40 CFR part 144.26 and reiterated in the new regulation at 144.83), and does not allow wastes or hazardous materials to enter the injection well in amounts which may cause a violation of the Safe Drinking Water Act. Residential stormwater is not regulated by the federal UIC program unless collected and disposed by a municipality or commercial enterprise.

If motor vehicle repair facilities and other industrial operations implement Best Management Practices (BMPs) to contain all process wastes and chemical materials above ground, there should be no need for shallow disposal wells in covered work areas. Potential contaminants need to be protected from stormwater and stormwater infiltration areas to ensure that the wastes do not find other pathways to surface and ground waters. Wastewater generated during work activities, such as waste from steamcleaning of engines and engine parts, should be recovered and recycled if possible, or disposed of legally. **Only precipitation and water from exterior vehicle washing** should be disposed in storm water infiltration areas or injection wells.

For questions about Clean Water Act stormwater implementation in EPA Region 9 areas, call Eugene Bromley at (415) 744-1906. For UIC storm water disposal wells, call Elizabeth Janes at (415) 744-1834.

Summary of Changes to Underground Injection Control regulations, 12/7/99

40 CFR parts 144-146

144.3 Changes to definitions and new definitions: cesspool, drywell, improved sinkhole, point of injection, sanitary waste, septic system, subsurface fluid distribution system, well, and well injection. ***NEW SUBPART G*** **144.79** General. **144.80** What is a Class V injection well? **144.81** 16 examples of types of Class V wells. **144.82** Reiteration of prohibition of fluid movement, regulatory tools to ensure protection, including steps for closure of wells that endanger ground water. *(See 40 CFR part 144.12)* **144.83** Reiteration of inventory requirements, and specific additional inventory information from specialized wells; (b) examples of information which may be requested from a specific well owner. *(See 40 CFR parts 144.26-27.)* **144.84** Criteria for authorization by rule to operate a Class V injection well, permits, and closure. **144.85** New restrictions on large capacity cesspools and motor vehicle waste disposal wells. **144.86** Information for well owners regarding Source Water Assessments. **144.87** Effective dates and timing with delineations of ground water protection areas (by Source Water Programs) and other sensitive ground water areas (delineated by UIC programs) and criteria/schedule for rule effectiveness statewide. **144.88** Tables which summarize restrictions/requirements for large capacity cesspools and motor vehicle waste disposal wells. (Contains Preclosure Notification form requirement.) **144.89** Summary of steps required for closure or conversion of injection wells.

145.23 Requirement that delegated state programs and EPA Regional Direct Implementation programs identify a method and schedule for delineating other sensitive ground water areas, i.e., those areas containing underground sources of drinking water which might not be otherwise delineated through the Source Water program.

146.3 New definitions reiterated. **146.10** Plugging and abandonment for all injection wells.

Some Upcoming Events

*February17-18: **National Ground Water Association**'s 2000 Pacific FOCUS on Ground Water Conference. Cathedral Hill Hotel. San Francisco, California. For more information call toll free (800) 551-7379 or see http://www.ngwa.org/education/pacific.html.*

*March 1: **Water Education Foundation**'s 17th Annual Executive Briefing. Radisson Hotel, Sacramento. For information, call (916) 444-6240.*

*April 24-28: **California Environmental Health Association** (CEHA) Annual Education Symposium, Fresno, California. Visit their website at www.ceha.org for information and registration form.*

Notes From Underground

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Class V Injection Wells inventoried in EPA Region 9: **16,320**

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